

Dentist-assistant communication style: perceived gender differences in The Netherlands and Northern Ireland

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Abstract - Objectives: To assess communication style differences with the (female) dental assistant, as perceived by male and female dentists. Methods: Data were collected from 216 Dutch (male: 99; female: 117) and 261 Northern Irish (male: 135; female: 126) dentists (overall response rate: 60%). Respondents filled in a self-report questionnaire (one follow-up mailing), with 22 items on staff communication style. Using principal component analysis, four distinguishable factors could be extracted: businesslike leadership style (seven items, Cronbach's $\alpha = 0.87$), friendly leadership style (seven items, $\alpha = 0.87$), professional interacting style (four items, $\alpha = 0.83$) and gender interacting style (four items, $\alpha = 0.83$). Results: MANOVA indicated a main effect for gender [F(8,946) = 10.905, P < 0.001] and for country [F(4,474) =4.197, P = 0.002] on the communication style scales. Male dentists, compared with female colleagues, showed higher mean scores on businesslike leadership style and gender interacting style, whereas female dentists showed higher mean scores on friendly leadership style and professional interacting style. Dutch dentists showed higher mean scores on friendly leadership style and professional interacting style than their Northern Irish colleagues. No interaction effect between gender and country was found. Dentist's age and length of assistant's employment (in years) partly explained differences in means. Conclusion: Male and female dentists perceive their communication with the assistant differently; male dentists tend to be influenced by the gender differences, female dentists by striving for friendliness. Some country differences were found. Increasing influx of young female dentists underlines the relevance of this topic in dental education and for future research.

Ronald C. Gorter¹ and Ruth Freeman²

¹Department of Social Dentistry and Dental Health Education, Academic Centre for Dentistry Amsterdam, Amsterdam, The Netherlands, ²Dental Public Health, Queen's University, Belfast, UK

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Ronald C. Gorter, Department of Social Dentistry and Dental Health Education, Academic Centre for Dentistry Amsterdam, Louwesweg 1, 1066 EA Amsterdam, The Netherlands Tel: +31 20 5188246 Fax: +31 20 5188233 e-mail: r.gorter@acta.nl

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The proportion of females among general dental practitioners is growing (1). In The Netherlands, for instance, the proportion of female general dental practitioners has increased from 18.4% in 1996 to 23.3% in 2003 (2, 3). In the USA 37.5% of the dental graduates was female in 2001–02 (4), whereas in the United Kingdom the proportion was 30% in 2000 (5, 6). In Northern Ireland, currently 39% of the working general practitioners are female (7). At least 50% of the dental students in the abovementioned countries are female, or this percentage

will be reached within a few years (4, 8–11). Factors explaining this increase are, among other things: good part-time working possibilities, and the possibility of working in a group practice with shared practice costs (9, 12).

In communication research, gender differences have been given special attention. Both in verbal and nonverbal behaviour, men and women tend to show communication differences (13–15). Women, more than men, are likely to engage in a communication style that is characterized by: a symmetrical equal communication pattern; striving to obtain cooperation; a focus on the emotions and feelings of their conversation partner; exchanging recognition of these feelings; creating harmony and equality. Men, on the other hand, are likely to engage in a style that is characterized by communicating asymmetrically, providing information to the other as a teacher instructs a pupil, and to find solutions instead of focusing on feelings, and hence their interactions are more competitive.

In the hospital setting, and in particular with regard to the doctor-nurse relationship, gender differences in communication patterns have been described in the following, possibly stereotyping way. The doctor is perceived as the dominant male who decides what will happen; the nurse is seen as a caring, gentle person, who takes care of the patient and follows the doctor's orders (16). The communication pattern between them has been described as: 'the doctor-nurse game' (17, 18), characterized by expedience and deceit. Although the nurse subtly influences actual patient treatment, the advice she provides is given in a cryptic and indirect way. Her nursing initiatives are not carried in an overt manner as this would damage the doctor's authority. The expedience of this subtle 'game' is to avoid arguments in front of patients and staff members while retaining the doctor's authority in the clinical arena.

Recently, in Norway Gjerberg & Kjølsrød (19) found that female doctors felt that their male colleagues received more and different types of cooperation from their nurses. Three specific aspects of deferential treatment were reported: the lesser amount of assistance received by (especially the younger) females; less respect and trust as received by the female doctors; and feelings of being different among female doctors, since they felt not to be part of the (male dominated) medical profession and also felt they differed from the (female dominated) nurses. The female doctors stated that they had three strategies to deal with deferential treatment from the nurses. These were: to strive for friendship with their nurses, to offer help to their nurses - both professionally and emotionally, and finally to do things for themselves, when creating friendship was not possible. These strategies resulted in a surplus of work activities beyond their 'doctoring' responsibilities and an impoverishment of their leadership skills.

The growth of female dental graduates allows the question to be asked whether there are differences in the communication styles used by female dentists compared with male ones when they interact with their dental staff. From the dental assistant's perspective some studies on, for example, well-being, work stress and job satisfaction are available in which the topic of staff communication is also mentioned (20-24). Among other findings, assistants reported that they could not communicate about their feelings with the dentist, which is something that influenced their job satisfaction negatively (20, 23). From the dentist's perspective, there was a paucity of research on this topic. Nevertheless, in one study on work stress among dentists, female dentists, compared with their male colleagues, reported significantly more often to be disrupted by having to be both employer and colleague of their assistant (25). In this study, female dentists appeared to be more sensitive than male colleagues to any disruption of the interpersonal communication pattern; for instance, females reported more stressful feelings with regard to: patients complaining about colleagues, threats of legal procedure by patients, or incompliant patients.

Although the Norwegian study (19) was conducted in a hospital setting, which has different conditions compared with a dental office, it does raise the question whether comparable patterns are visible in the dental environment. In The Netherlands and Northern Ireland, this question has been examined qualitatively (26). The findings suggest that all dentists felt that male colleagues had easier working relations with their assistants. It seemed that irrespective of whether female dentists adopted a 'friendly like' or 'businesslike' strategy, assistants could neglect their instructions and/or react in a disrupted manner towards clinical requests made by the female dentists. Male dentists felt that the basis for their female colleagues' difficulties was a consequence of inconsistent working strategies employed, especially by younger female dentists. Female dentists tended to be both 'friendly like' and 'businesslike' towards their assistant at different times, whereas male dentists tended to maintain a hierarchical management framework throughout. Although some differences were described, working strategies and experiences were remarkably similar in both countries involved, according to this qualitative study. If patterns as described are indeed colouring the working relationships in a dental practice, given the growing proportion of females entering the profession, attention should be paid to

improvement of working relation patterns, especially for female dentists.

The aim of the present study, therefore, was to investigate if male and female dentists perceive their communication style with the assistant differently. It was hypothesized that male dentists would describe their communication style as predominantly businesslike, whereas female dentists would report striving for friendliness in their communication style. In addition, in order to better allow generalizations to other countries, a comparison was included between The Netherlands and Northern Ireland. Between these countries, the proportion of males compared with females working as a dentist differs substantially, with a percentage of female dentists almost twice as high in Northern Ireland (2, 3, 7), and furthermore, gender inequalities exists in Northern Ireland compared with The Netherlands (27). From a qualitative study conducted in both countries, it appeared that some country differences were reported with respect to communication style, although it was the dentist's gender which explained differences predominantly (26). Therefore, in the present study it was hypothesized that some country differences would occur in reported communication style.

Materials and methods

Participant selection

In The Netherlands, around 7500 general dental practitioners were registered in early summer 2001. The Information Department of the Dutch Dental Association (NMT) was asked to randomly select 400 dentists (200 males and 200 females). Stratification instructions made sure that 100 male dentists and 100 female dentists worked in a group practice, and 100 male dentists and 100 female dentists worked as a solo practician. Of the selected, 100 men and 100 women were younger than 35 years of age, and 100 men and 100 women were aged 35 onwards - in almost all cases this meant either at least 10 years of practice experience, or less - both age groups equally divided between group and solo practice form. At the same time, from the British Dental Association postgraduate education mailing list - on which all dentists who must do continuing professional development are accessible, including those who work in hospital and/or University or in the community dental service - all 700 NHS general dental practitioners were selected. Of these, the first 200 males and first 200 females on an alphabetically ordered list by family name were selected. In this case, no other stratification than by gender was possible.

Procedure

After selection, subjects received a cover letter, signed by an assistant researcher doing her doctoral thesis, and recommended by both the chairman of the Department of Social Dentistry and Dental Health Education at the Academic Centre for Dentistry in Amsterdam, and the counter responsible at Dental Public Health at Queen's University in Belfast. It was explained that the study was conducted by members of both universities, and that addresses were obtained with the support of dental associations in both countries. No further approval was considered necessary for this survey. Furthermore, it was explained that anonymous participation was guaranteed, that no individual information would be made available to any party, and that publications would be based upon aggregate findings. Three to 4 weeks after having received the first mailing (letter, questionnaire, and return envelope free of postage), all participants received a second mailing, either reminding the subjects to fill in the questionnaire, or expressing thanks in case they already had returned it. (Further detailed information with regard to the procedure can be obtained through the corresponding author.)

Materials

A questionnaire was developed, consisting of two parts. The first part consisted of 15 items on various personal and practice characteristics, of which a selection is presented in Table 1. The second part consisted of 22 statements on staff communication with whom the dentists consider their primary assistant, which could be answered on a 5-point Likert scale, varying from 1 (I disagree completely) through 3 (Neutral, no opinion, or not applicable to my situation) to 5 (I agree completely) (Items can be found in Table 2). The items were constructed based on the results of a series of interviews among Dutch and Northern Irish dentists (26). In order to further obtain an acceptable degree of cultural equivalence, a first draft of the questionnaire was commented upon by members of staff of the Department of Social Dentistry and Dental Health Education, Amsterdam, the Dutch Dental Association, the Haarlem School for Dental

Gorter & Freeman

		п		%
All respondents		477		60
The Netherlands		216		54
Males		99		46
Females		117		53
Northern Ireland		261		66
Males		135		51
Females		126		48
Practice organization				
The Netherlands				
Solo practice				36
Group practice				46
Other				18
Northern Ireland				
Solo practice				23
Group practice				76
Other				2
	The Netherlands	3	North Ireland	
	Male $(n = 99)$	Female $(n = 117)$	Male $(n = 135)$	Female $(n = 126)$
	(n = jj)	(n - 117)	(n = 100)	(n = 120)
Age of dentist (years)	40.8 (14.2)	36.5 (10.7)	41.2 (10.2)	34.5 (8.3)
Age of assistant (years)	33.0 (9.5)	33.1 (9.6)	27.4 (7.3)	27.5 (7.9)
Hours per week assistant works in dental office	27.7 (9.2)	27.7 (9.6)	35.9 (4.1)	34.6 (7.1)
Assistant's period of employment in years	6.3 (7.3)	5.3 (5.4)	5.7 (5.6)	3.7 (4.5)

Table 1. Response characteristics

Values are expressed as mean (SD).

Assistants (all in The Netherlands), and Dental Public Health, Belfast (Northern Ireland). Subsequently, a parallel version in Dutch and in English was prepared by a licensed translation office (Vrije Universiteit, Amsterdam) and tested among a pilot group in both countries.

Using principal component analysis, after varimax rotation, four scales could be extracted with eigenvalue >1, explaining 64.9% of the variance. These four scales were interpreted as: businesslike leadership style - the content of this scale reflects a rational, not necessarily emotional understanding in the working relationship (items 2, 4, 6, 11, 12, 17, 22; Cronbach's $\alpha = 0.87$); friendly leadership style – the content of this scale reflects the exchange of feelings and paying attention to one's emotional needs (items 1, 5, 7, 13–16; Cronbach's $\alpha = 0.87$); professional interacting style - the content of this scale reflects a relationship in which communication is aimed at good professional results (items 3, 8–10; Cronbach's $\alpha = 0.83$); and gender interacting style - the content of this scale reflects one's opinion about gender preferences in the working relation (items 18–21; Cronbach's $\alpha = 0.83$) (Table 2). Deletion of items would not improve internal consistency figures on any of the scales. As can be expected, all scales were strongly intercorrelated, with Pearson product–moment correlations: $0.55 \ge r \le 0.72$ (Table 3).

Statistical analysis

Indices were constructed by computing average scores for each of the four interaction style scales. Gender and country differences in mean scores on the four scales were assessed in a single, multivariate, analysis of variance (using SPSS's GLM). MANOVA included relevant covariates in a second analysis. Product-moment correlation coefficients were calculated between communication style scale scores and covariates.

Results

Response

Six weeks after the first mailing, and after having sent a reminder, an overall response rate of 60% was obtained (Table 1). Less than 1% of the returned questionnaires was not fit for analysis because of crucial missing values. With regard to gender and

Gender differences in dentist-assistant communication style

Table 2.	Communication	style scales:	principa	l comp	oonent anal	ysis with	rotated	factor	loadings	(varimax)
		2								

		Businesslike leadership style	Friendly leadership style	Professional interacting style	Gender interacting style
1.	My working relationship with my dental nurse is for the		0.609	0.431	
2.	most part friendly My working relationship with my dental nurse is for the most part businesslike	0.489		0.498	
3.	My dental nurse knows immediately when I need her assistance		0.543	0.616	
4.	I always have to ask my dental nurse when I want her to do something for me (for instance: cleaning up or handing me something)	0.697			
5. 6.	I often talk about personal problems with my dental nurse I find that talking about private matters with my dental nurse disturbs the employer (employee role pattern	0.630	0.740	0.468	
7.	I count my dental nurse as one of my friends		0.707	0.306	
8.	I have regular meetings with my dental nurse about her	0.468		0.558	
9.	If something is bothering me about the working relationship with my dental nurse, I feel free to talk about it with her		0.362	0.755	
10.	I have the impression that my dental nurse will tell me		0.375	0.719	
11.	if something is bothering her about our working relationship If something is bothering me about the working relationship with my dental nurse, I will report it to an intermediary, for	0.581	0.322		
12.	instance the practice manager If I make suggestions about how we should work together, it will take a while before my dental nurse accepts my remarks	0.738			
13.	When there is friction or irritation between my dental nurse and me, I usually solve this by paying personal attention to our feelings	0.344	0.564		
14.	When there is friction or irritation between my dental nurse and me I usually solve this by relieving the tension by humour	0.378	0.641		
15.	When there is friction or irritation between my dental nurse and me, I usually solve this by using the 'playful atmosphere' that can exist between a dentist and a dental	0.431	0.689		
16.	I think that there is often a flirting element in the working relationship between a male dentist and a female dental nurse	0.487	0.532		
17.	I think that female nurses will sooner accept the leadership of a male dentist than the leadership of a female dentist	0.623			0.399
18.	In my opinion the best work combination in a dental practice	0.525			0.630
19.	In my opinion the best work combination in a dental practice is a female dentist and a female dental nurse	0.329	0.338	0.319	0.499
20.	I would rather employ a female dental nurse than a male				0.820
21.	I would rather employ a female dental nurse than a male dental nurse, as I believe that my patients would be more				0.803
22.	At ease in the presence of a woman My dental nurse often calls in sick	0.724	0.319		

Factor loadings <0.300 have been left out of the table. Item factor loadings being part of corresponding scale have been printed in bold.

age distribution, the response group consisted of 234 male dentists (48%) and 233 females (52%), of whom 245 (51%) were aged 35 years or younger and 230 (49%) were aged 36 years onwards. Of six respondents, gender was unknown. Chi-square statistics showed no statistical significant differences on these criteria. Of all respondents, only two

reported to work with a male assistant (and were excluded from further analysis).

Practice characteristics

With regard to age, male dentists in both countries were on average 4–5 years older than their female colleagues. Assistants in Northern Ireland were, on

Table 3. Product–moment correlation coefficients communication styles (P < 0.01)

		Friendly leadership style	Professional interacting style	Gender interacting style
1.	Businesslike	0.678	0.644	0.679
2.	leadership style Friendly		0.725	0.623
3.	leadership style Professional interacting style			0.556

average, 6 years younger than their Dutch colleagues (27 years of age against 33). The age gap between dentist and assistant was largest among Northern Irish male dentists (13.8 years on average), and smallest among Dutch female dentists (3.4 years on average). Mean number of assistants' working hours per week in The Netherlands was about 7 h less than in Northern Ireland (27 h per week against 35). The mean number of years the assistant had been employed was lowest among Northern Irish female dentists (3.7 years of employment) and highest among Dutch male dentists (6.3 years of employment) (Table 1).

Communication style

Results of a MANOVA indicated gender differences to occur on the interaction style scales [F(8,946) = 10.905, P < 0.001]. Univariate analysis

showed male respondents to have higher scores on businesslike leadership style and gender interacting style, whereas female respondents had higher mean scores on friendly leadership style and professional interacting style (Table 4). Main effects were also found for country on the interaction style scales [F(4,474) = 4.197, P = 0.002].Univariate analysis revealed Dutch dentists, compared with their Northern Irish colleagues, to have higher mean scores on friendly leadership style and professional interacting style (Table 4). MANOVA revealed no interaction effect between gender and country on the four scales [F(8,946) = 1.681, NS]. For reasons of completeness, also means and standard deviations by gender and country are shown in Table 4.

In order to check for possible nonresponse bias, it was assumed that an indication could be obtained from comparing late respondents' answers (those who responded after a reminder: 39% in The Netherlands, 47% in Northern Ireland) with early respondents' answers (61% in The Netherlands, 53% in Northern Ireland). If these two groups would differ, this could be interpreted meaning that nonresponse bias was likely. However, comparison of mean scores per country on all four interaction style scales revealed no statistical significant differences on any of the scales.

Table 4. Means and standard deviations of communication style scales (a) by gender, (b) by country, and (c) by gender and country

	All males ($n = 234$)	All females ($n = 243$)	F(2,477)	Р
(a)				
Businesslike leadership style	2.59 (1.01)	2.51 (1.25)	7.127	0.001
Friendly leadership style	3.17 (0.97)	3.38 (1.14)	6.276	0.002
Professional interacting style	3.80 (0.97)	3.88 (1.06)	6.924	0.001
Gender interacting style	3.38 (1.01)	2.85 (1.34)	17.967	< 0.001
	The Netherlands ($n = 219$)	Northern Ireland ($n = 264$)	F(1,477)	Р
(b)				
Businesslike leadership style	2.64 (1.57)	2.51 (0.74)	1.134	NS
Friendly leadership style	3.35 (1.43)	3.24 (0.71)	6.442	0.011
Professional interacting style	3.98 (1.29)	3.76 (0.80)	9.199	0.003
Gender interacting style	3.07 (1.59)	3.18 (0.92)	0.003	NS
	The Netherlands		Northern Ir	eland
	Males	Females	Males	Females
	(n = 99)	(n = 117)	(n = 135)	(n = 126)
(c)				
Businesslike leadership style	2.68 (1.38)	2.57 (1.62)	2.53 (0.60)	2.45 (0.79)
Friendly leadership style	3.21 (1.32)	3.43 (1.43)	3.15 (0.60)	3.33 (0.78)
Professional interacting style	3.93 (1.19)	3.98 (1.30)	3.71 (0.77)	3.79 (0.77)
Gender interacting style	3.39 (1.32)	2.77 (1.66)	3.37 (0.69)	2.93 (0.94)

GLM revealed no statistical significant interaction effects. Values are expressed as mean (SD).

Table 5. Product–moment	correlation	coefficients	between	communication	style	scales	and	person	and	practice
characteristics ($n = 483$)										

	Age of dentist	Age of assistant	Hours assistant works weekly	Period assistant is employed
Businesslike leadership style	0.244**	-0.081	-0.011	-0.033
Friendly leadership style	0.205**	0.060	-0.090	0.153**
Professional interacting style	0.280**	0.023	-0.049	0.115*
Gender interacting style	0.333**	-0.022	-0.002	0.101*

P* < 0.05; *P* < 0.001.

In a second analysis, after taking into account the covariates dentist's age, age of the assistant, the number of hours the assistant weekly works in practice, and the number of years the assistant has been employed, once again, no interaction effect between gender and country was revealed [F(8,938) = 1.634, NS]. Main effects were still shown on gender [F(8,938) = 7.597, P < 0.001]and on country [*F*(4,470) = 2.770, *P* = 0.027]. However, this time gender effects appeared on two of the four scales: friendly leadership style [F(2,473) = 4.170, P = 0.016], and gender interaction style [F(2,473) = 12.113, P < 0.001], whereas country effects were only shown on professional interaction style [F(1,473) = 4.327, P = 0.038]. In other words, differences in means on businesslike leadership style [F(2,473) = 1.250, NS] and on professional interaction style [F(2,473) = 2.554,NS] could not be explained by gender but appeared to be caused by the covariates. Differences in means on businesslike leadership style [F(1,473) = 1.233, NS], on friendly leadership style [F(1,473) = 0.759, NS], and on gender interaction style [F(1,473) = 1.933, NS] could not be explained by country but should also be explained by the covariates.

Pearson correlations were calculated to detect possible structures in the differences found. Older dentists reported to adopt all communication styles to a higher degree than their younger colleagues (Table 5). Age of the assistant appeared not to be correlated to any of the communication styles, neither was the number of hours an assistant weekly worked. Except for businesslike leadership style, the more years an assistant had been employed was correlated to higher scores on communication style.

Discussion

The aim of the present study was to investigate if male and female dentists differ in the way they

perceive their communication style with the assistant. It was hypothesized that male dentists would describe their communication style as predominantly businesslike, whereas female dentists would report striving for friendliness in their communication style. From this study it can be concluded that male and female dentists report different and distinguishable communication styles when interacting with their assistant. Female dentists perceive a predominantly 'friendly leadership style', and also a 'professional interaction style', whereas male dentists report to adopt a 'businesslike leadership style', and also a 'gender interacting style', thus confirming the first hypothesis. As expected, country differences did also occur; Dutch dentists reported to adopt a more 'professional interaction style' and a 'friendly leadership style' when compared with their Northern Irish colleagues. However, covarying personal and practice-related factors, in particular: age of the dentist, age of the assistant, number of hours an assistant weekly works, and the number of years the assistant had been employed could explain some of these differences. Taking into account these variables, male dentists still reported a stronger gender-influenced interacting style, and female dentists still reported to strive for a friendly leadership style. With respect to country differences, Dutch dentists still reported a more professional interacting style.

Previous research has shown that female doctors in a hospital setting, in comparison with their male colleagues, tended to use different communication styles when interacting with nurses (19). Although it should be kept in mind that no fully opposing behaviours are involved, according to the authors the essence of these differences was the need among female doctors, more than among their male colleagues, to become friends with their nurses. This need for friendship interfered with their leadership skills, while trying to assist their nurses both professionally and with their personal problems. The outcomes of the present study in a dental situation fit well into the doctor–nurse

Gorter & Freeman

experiences. In the present study, a communication style based upon friendliness was reported to a higher degree by female dentists. However, whether this need for friendship also interferes with their authority could not be measured. It should be noted, as is described elsewhere (26), that women entering a male-dominated profession tend to shift between 'friendly like' and 'businesslike' working strategies. It is this shift that often causes diffusion in the working relationship with the assistant, and it is recommended as a topic to explore in future studies, preferably by measuring the assistant's perspective. To underline the usefulness of such an exploration: from studies on work stress among dentists it has been reported that a significantly higher percentage of female dentists, when compared with male colleagues, describe interpersonal problems with their assistants as a reason of increased work stress (24).

Although country differences existed - for example, Dutch dentists had a propensity to use 'professional interacting style' compared with those in Northern Ireland, it was the differences in gender communication style which predominated as a distinguishing factor in both countries. The continuity in the results in both countries suggests that the gender differences described are likely to be common in other European countries. A restriction of the present study was the fact that the population was restricted to general dental practitioners. In some countries, distinctions are made between forms of dental practice, for instance, community dental services and private practitioners. It is encouraged to extend the gender aspects of the dentist-assistant communication style to other areas in the dental practice.

Age is an aspect to be considered as the increased influx of females in the profession means that their average age is considerably lower than that of their male colleagues. In The Netherlands, 54% of the female dentists are younger than 40 years of age, whereas 65% of the males are over 40 (9). In the present study, in both countries involved, the female dentists were younger than their male colleagues on average indeed, which reflects the gender distribution within the profession in general. Consequently, the age gap between female dentists and their assistant was smallest. In this study, age was a covarying factor that could explain differences in reported communication style with respect to businesslike leadership style and professional interacting style. However, even when age was taken into account, friendly leadership style remained highest among females, and gender interacting style remained highest among males.

Clearly, the younger dentist is less experienced in adopting appropriate communication styles in the dental surgery setting. The majority of the females is relatively young and their lack of experience in staff management increases the propensity for problems to arise when interacting with assistants. Professional communication skills are now accepted as a requirement in many undergraduate curricula (28). While recognizing that most, if not all, of these programmes are focused on communicating with the patient it is considered important for dental schools to include appropriate staff communication skills, including gender differences. Attention should be directed at both the undergraduate and postgraduate level. At the postgraduate (practice) level, apart from education, a possible solution to improve staff communication may be to organize regular feedback meetings. In many organizations, small or large, yearly or halfyearly appraisal meetings are obligatory. From additional information by the respondents in the present study, it appeared that clear job descriptions and contracts are not routine in a majority of dental practices. In order to improve staff communication, much can be gained by incorporating appraisal and organizational procedures, as well as job descriptions.

The instrument to assess communication style was developed for this study. From a psychometric point of view, the internal consistency is satisfying, but further application is necessary in order to confirm its validity in assessing communication styles. Test-retest reliability, as well as further validation (for example, correlation with the assistants' opinions, interaction analysis from observation methods, diversity of dental practices, wider variety of countries), are suggestions for future research. The fact that the instrument was used in two countries requires even more attention for the validity question. In the present study, a careful procedure was followed in order to establish an acceptable level of cultural equivalence, as described in Materials and methods. However, possible differences in interpretation of phrasings used in different language cannot be neglected. If the instrument is to be used in future research in any given language, careful cross-cultural adaptation remains a point of attention (29).

With regard to some outcomes, differences found, although statistically significant, appeared

rather small. For instance, differences in mean scores between males and females on businesslike leadership style seem quite small (Table 3). The fact that large numbers of respondents took part in the study increased the statistical power in such a way that statistical significance was reached and findings could not be interpreted as being coincidental. It should be kept in mind that two to a large extent overlapping distributions of responses of male and female dentists are discussed, with a relatively smaller segment not overlapping. Nevertheless, this may as well be regarded as a plea for replication and extension of the present study to a diversity of dental practices, including the involvement of various countries.

Also with regard to the outcomes of the study, any future application of the questionnaire may improve our understanding of communication style in the dental office. Several variables may be considered of relevance to interpret gender differences in communication style. Apart from the factors age or working history, which were chosen as covariables in this study, other aspects might explain differences in outcome. For instance, the status of the dentist involved (principal dentist or associate), the urbanization level of the community in which the practice is located (countryside or large city), or the number of assistants employed could all appear to be factors of influence.

This study has focused on perceived gender differences that occur in communication style for male and female dentists. However, some limitations of this subjective perspective need to be mentioned. First, men and women may differ in their answering tendency, caused by social desirability. Female dentists could very well have the opinion that friendliness is a desirable quality in the relation with the assistant, whereas male dentists could prefer the self-image of being a professional or businesslike leader. These response biases, based upon ideal images, may have influenced answering tendencies (30). Parallel to this methodological artefact, it should be mentioned that age may also have influenced the answers in the following way: possibly older and younger dentists have different ideal views of how communication patterns with the assistant should be. Second, the issue is only examined from the dentist's perspective, thus representing one side of the interaction. Both limiting factors underline the necessity of examining communication both with a variety of methods, as well as also from the

dental assistant's perspective. A replication of this study focusing on dental staff communication patterns with the subjects being assistants would provide useful information on how to gain a greater understanding of staff communication in the dental setting.

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Gorter & Freeman

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